ABSTRACT

The efficiency of real-time distribution of multimedia content over a heterogeneous network is optimized by locally, rather than centrally, adapting the content to conform to the capabilities limitations of the network. Multimedia content travels from a central location along the network backbone. When received by each of a system of dispersed media servers, that media server adapts the content by compensating for any QoS limitations of the downstream network segments. For example, the backbone of the communications network may consist of a satellite uplink. The dispersed media servers receive and replicate the content as required for distribution to unicast segments downstream rather than doing so at the source of the content, and thus multiple streams of identical content need not be carried on the backbone. Each dispersed server is programmed to optimize the transmission to conform to the transmission parameters of each adjacent and downstream segment of the network.